BEFORE THE DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

In the matter of the proposed amendment of ARM 36.12.101, definitions and ARM 36.12.120, basin closure area exceptions and compliance	))))	NOTICE OF PUBLIC HEARING ON PROPOSED AMENDMENT

To: All Concerned Persons

1. On September 26, 2007, at 9:00 a.m., the Department of Natural Resources and Conservation will hold a public hearing in the Department of Public Health and Human Services Auditorium, 111 North Sanders, Helena, Montana, to consider the amendment of the above-stated rules.

2. The department will make reasonable accommodations for persons with disabilities who wish to participate in this public hearing or need an alternative accessible format of this notice. If you require an accommodation, contact the department no later than 5:00 p.m. on September 14, 2007, to advise us of the nature of the accommodation that you need. Please contact Kim Overcast, Montana Department of Natural Resources and Conservation, 1424 9th Avenue, Helena, MT 59620, (406) 444-6614, fax (406) 444-0533, or e-mail to kovercast@mt.gov.

3. The rules as proposed to be amended provide as follows, stricken matter interlined, new matter underlined:

36.12.101 DEFINITIONS Unless the context requires otherwise, to aid in the implementation of the Montana Water Use Act and as used in these rules:

(1) through (7) remain the same.

~~(8) "Augmentation plan" means a plan to provide water to a source of supply and its tributaries to mitigate the depletion effects of a permit or change authorization. The augmentation water right priority date is important to the success of any augmentation plan since call can be made on that water right. Examples of augmentation include, but are not limited to augmenting the source of supply with water from a nontributary source, or retiring all or a portion of senior water rights in the same source of supply in amounts equal to or greater than the depletion effects of the permit or change application.~~

(9) through (32) remain the same but are renumbered (8) through (31).

~~(33) "Immediately or directly connected to surface water" means ground water which, when pumped at the flow rate requested in the application and during the proposed period of diversion, induces surface water infiltration.~~

~~(34) "Induced surface water infiltration" means that water being pumped from a ground water source is pulling surface water into the cone of depression.~~

(35) through (39) remain the same but are renumbered (32) through (36).

(37) “Net depletion” for the purposes of 85-2-360, MCA, means the calculated volume, rate, timing, and location of reductions to surface water resulting from a proposed groundwater appropriation that is not offset by the corresponding

accretions to surface water by water that is not consumed and subsequently returned to the surface water.

(40) through (50) remain the same but are renumbered (38) through (48).

(49) "Potentially affected area" means, as referred to in basin closure rules and in the context of a net depletion analysis, the area or estimated area where groundwater will be affected by a proposed project. The identified area is not required to exceed the boundaries of the drainage subdivisions established by the Office of Water Data Coordination, United States Geological Survey, and used by the Water Court, unless the applicant chooses to expand the boundaries.

(51) through (78) remain the same but are renumbered (50) through (77).

AUTH: 85-2-370, MCA
IMP: 85-2-360 through 85-2-364, 85-2-368, MCA

36.12.120 BASIN CLOSURE AREA EXCEPTIONS AND COMPLIANCE

(1) through (5) remain the same.

~~(6) Augmentation plans are allowed in basin closure areas. An augmentation plan must mitigate the effects to the surface water source that would be depleted because of a proposed application.~~

~~(7) Augmentation must occur in the depleted reach and during the season of depletion.~~

~~(8) An augmentation plan must include a measuring plan to ensure that the source being depleted is receiving the benefits of the augmentation.~~

~~(9) If an augmentation plan requires more than one application, all applications will be processed simultaneously. If any of the augmentation applications is terminated or denied, all related applications will be terminated or denied.~~

~~(10) If an augmentation plan includes the filing of a Notice of Completion of Groundwater Development, the water must be from a nontributary source. The Notice of Completion must be filed with the department as soon as the water is used for augmentation.~~

~~(11) In basin closure areas that allow applications for ground water that is not immediately or directly connected to surface water, information must be included in the document required in (2) demonstrating that the application qualifies as a ground water exception.~~

~~(12) The department will not determine an application to be for a permit to appropriate ground water unless the department can determine from the information provided that the cone of depression or zone of influence of a pumping well will not induce surface water infiltration during the proposed period of diversion.~~

~~(13) The department hydrologist shall make a written determination that the evidence submitted by an applicant is sufficient on which to base a determination that the proposed source aquifer is not hydraulically connected or if hydraulically connected to surface water, will not induce surface water infiltration.~~

~~(14) An applicant must address whether the source aquifer is hydraulically connected to any surface water sources that lie within an estimated or actual delineated zone of influence. An applicant may use the results of an appropriate nearby aquifer test to approximate the zone of influence. Depending on~~

~~circumstances, such as proposed flow rate and volume, cyclic pumping, well depth, or distance to surface water, an applicant may be able to demonstrate that there is not nor will there be a hydraulic connection to surface water when water is pumped at the proposed flow rate during the period of diversion.~~

~~(a) High and low transmissivity and storativity values can be evaluated and used to estimate a zone of influence. The applicant must determine if the source aquifer is hydraulically connected to surface water within the delineated zone of influence.~~

~~(b) Relative or absolute elevations of groundwater levels and beds of surface water sources are needed to evaluate whether a hydraulic connection exists.~~

~~(c) Water level data may be obtained from existing wells located within the zone of influence or at the surface water source.~~

~~(d) If existing wells are not available, the installation of small diameter wells, pits, wellpoints, or piezometers, including those adjacent to or in the surface water source, can be used to determine the existence of a hydraulic connection.~~

~~(e) If an applicant demonstrates that the static groundwater level is greater than 10 feet below the bed of a surface water source, the source aquifer is not considered hydraulically connected to surface water at that location. Further testing for induced surface water infiltration at the tested location is not required.~~

~~(f) If an applicant demonstrates that the static ground water level is less than 10 feet below the bed of a surface water source, additional proof is required to show whether the source aquifer is hydraulically connected to surface water. Additional proof must include an evaluation of capillary pressure, saturation, and unsaturated flow between the bed of the surface water source and the water table, and diurnal and seasonal fluctuations of static water levels. If additional proof is not provided, the source aquifer is considered to be hydraulically connected to surface water at that location. Further testing must be conducted to determine whether pumping the proposed well will induce surface water infiltration during the proposed period of diversion.~~

~~(15) An aquifer test must be conducted using methods described in ARM 36.12.121 that will determine the aquifer properties needed to determine the zone of influence for the period of diversion and the potential for drawdown to induce infiltration of surface water within the zone of influence.~~

~~(a) One or more observation wells may be needed to measure ground water levels between the proposed production well and surface water sources and to determine hydraulic gradients before and during aquifer testing.~~

~~(b) Staff gage(s) must be installed in surface water source(s) adjacent to the observation well(s) to monitor stage(s) during the aquifer test for comparison with ground water level(s).~~

~~(c) Relative or absolute elevations of ground water levels and surface water stages must be compared to determine whether the hydraulic gradient between the source aquifer and gaining surface water sources is reversed or whether the hydraulic gradient between losing surface water sources and the source aquifer is steepened. The occurrence of either during the aquifer test constitutes induced surface water infiltration.~~

~~(d) To evaluate whether induced surface water infiltration will occur during the period of diversion, an applicant must project drawdown to the surface water~~

~~sources for the period of diversion using aquifer properties determined from the aquifer test. Analytical equations, an analytical ground water flow model, or a numerical ground water flow model may be used to evaluate whether induced surface water infiltration will occur.~~

~~(e) An applicant must evaluate whether a surface water body or reach is losing or gaining to evaluate whether a proposed well will induce surface water infiltration.~~

~~(i) If the applicant projects that drawdown will reach a losing surface water source that is hydraulically connected to groundwater during the period of diversion, the department will determine that pumping the proposed well will induce surface water infiltration.~~

~~(ii) For gaining surface water sources, the hydraulic gradient must be compared with the slope of the cone of depression that would be created during the period of diversion. If the comparison shows that the slope of the cone of depression is greater than the hydraulic gradient, the department will determine that pumping the proposed well will induce surface water infiltration.~~

~~(16) For groundwater pits, the department will determine that evaporation losses do not induce surface water. If water is being pumped from the pit, then a hydraulic analysis is required to determine if pumping will induce surface water infiltration.~~

(6) A net depletion analysis must include hydrogeologic data or a model developed by a hydrogeologist, a qualified scientist, or a qualified licensed professional engineer.

(a) The net depletion analysis must include but is not limited to analysis of the following factors within the potentially affected area:

(i) The degree of hydraulic connection between the source aquifer and all potentially affected surface water. Surface water means, in addition to the Administrative Rules of Montana, 36.12.101(63) and for the purposes of 85-2-360 through 85-2-362, MCA, includes but is not limited to rivers, streams, irrigation canals, or drains.

(ii) The average monthly flow rate and volume of water consumed for a proposed project.

(iii) Propagation of drawdown from a well or other groundwater diversion and rate, timing, and location of any resulting surface water depletion effects.

(iv) The volume, rate, timing, and locations of accretions to surface water by water that is not consumed and is subsequently returned to surface water.

(b) The determination of the degree of hydraulic connection between a source aquifer and surface water within the potentially affected area must include an analysis of geology and static groundwater elevations relative to the elevation of surface water beds. Such analysis must include:

(i) Groundwater boundaries identified by the applicant for the potentially affected area. The identified area does not need to extend beyond the boundaries of the water right basins used by the department and established by the Office of Water Data Coordination, United States Geological Survey and used by the Water Court, unless the applicant chooses to expand the boundaries. The following information must be included with the application to establish the location of the aquifer boundaries:

(A) a description of how the potentially affected area was delineated;

(B) geologic maps (including stratigraphy and structure), well-log data, and aquifer testing;

(C) the extent (vertical and lateral) and properties of a source aquifer (hydraulic conductivity, transmissivity, storage coefficient, flow direction, rate of movement, and water availability) and any confining layers; and

(D) the presence of any faults, all relative to the locations of potentially affected surface water.

(ii) Evidence and supporting information of the degree of hydraulic connection between the source aquifer and surface water sources located within the potentially affected area, including but not limited to rivers, springs, creeks, streams, reservoirs, lakes, irrigation canals, or drains that may or may not show a net depletion. The assessment may include, but is not limited to the following:

(A) map showing locations of potentially affected surface water;

(B) the distance between the proposed points of diversion and potentially affected surface water;

(C) geologic map from United States Geological Survey or Montana Bureau of Mines and Geology of the potentially affected area;

(D) using existing test and production well logs, cross-section(s) showing source aquifer and any confining layers;

(E) aquifer test results and interpretation of those results;

(F) locations where bedrock aquifers outcrop beneath surface water and where alluvial aquifers exist in the potentially affected area;

(G) relevant stream-flow data from United States Geological Survey or other published source for rivers, springs, creeks, streams, reservoirs, lakes, irrigation canals, or drains within the potentially affected area;

(H) relative elevations of groundwater and surface water beds in the potentially affected area, as determined by measuring static water levels in wells that have been surveyed relative to surface water bed elevations;

(I) hydrographs of groundwater levels and surface water flows in the area of potential effect;

(J) monitored groundwater levels and measured surface water gains and losses; and

(K) any surface water measurements that have been made by the applicant, or another, including but not limited to canal, drain, water commissioner, or other stream gauging records.

(iii) Existing water rights - an applicant must provide the following information:

(A) a list and map of the points of diversion of surface water appropriation rights, including but not limited to rivers, springs, creeks, streams, reservoirs, lakes, irrigation canals, or drains located within the potentially affected area; and

(B) a list and map of the points of diversion of groundwater rights on record with the department that are located within the potentially affected area.

(c) The flow rate diverted and the volume of water consumed by a proposed project must include an analysis of:

(i) the flow rate and period of diversion of water actually diverted for the proposed project as compared to that diverted for like beneficial uses; and

(ii) estimates of the volume consumed by evaporation, plant transpiration (evapotranspiration), interception losses, depression storage losses, and all other forms of consumption associated with the proposed project. Interception losses include that portion of precipitation which wets and adheres to surface objects, such as vegetation and other cover, and is returned to the atmosphere through evaporation. Depression storage losses include that portion of precipitation that is trapped in small surface depressions and returned to the atmosphere through evaporation:

(A) consumed water calculation - the following methods may be used to determine the rate and volume of water consumed by the proposed project

(i) for irrigation or lawn and garden use, the potential evapotranspiration losses via measurements or computations using a method that is scientifically defensible;

(ii) household consumption estimates from generally accepted published data and guidelines; and

(iii) wastewater treatment estimates considering evaporation rates from lagoons and evapotranspiration rates from disposal beds or flow measurements from similar existing systems.

(d) An analysis of the drawdown must include the volume, rate, timing, and location of any resulting surface water depletion effects, within the potentially affected area caused by pumping the proposed well or other groundwater diversion, including at a minimum, but is not limited to the following:

(i) the distance between a well and any potentially affected surface water;

(ii) depth of a well;

(iii) aquifer properties from aquifer tests, existing data, or other previous studies;

(iv) the location of all wells or other sources of groundwater of record within the potentially affected area;

(v) the degree of connection between the surface water and the source aquifer to the proposed well;

(vi) pumping schedule for the proposed project;

(vii) confining layer properties from source aquifer testing; and

(viii) location and type of source aquifer boundaries.

(e) An evaluation of potential return flows to a source aquifer or surface water source within the potentially affected area must be included and must identify the volume, rate, timing, and location of return flows.

(i) In addition to the Administrative Rules of Montana, 36.12.101(57) and for the purposes of 85-2-361, MCA, return flows includes but is not limited to any treated wastewater if the treated wastewater will be used as part of a aquifer recharge plan.

(f) Drawdown from a well and the volume, rate, timing, and location of any resulting gross surface water depletion which depends on:

(i) the distance between a well and surface water;

(ii) the depth of the well;

(iii) aquifer properties;

(iv) location of aquifer boundaries; and

(v) the degree of hydraulic connection between surface water and the source aquifer to the well.

(g) A water balance table must be included that describes the monthly and total annual water balance for the proposal. It must include an accounting of the following:

(i) the volume of water that would be diverted;

(ii) the volume of water that would be consumed;

(iii) the volume of water that would return to an aquifer and to surface water; and

(iv) the volume of net depletion to surface water, including but not limited to rivers, springs, creeks, streams, reservoirs, lakes, irrigation canals, or drains.

(h) Information required by the hydrogeologic assessment may not be sufficient to meet applicable criteria under 85-2-311, MCA, including but not limited to adverse effect to a prior appropriator. The applicant for a beneficial water use permit pursuant to 85-2-311, MCA, is responsible for providing sufficient evidence to meet all applicable criteria.

AUTH: 85-2-370, MCA
IMP: 85-2-360 through 85-2-364, 85-2-368, MCA

REASONABLE NECESSITY: House Bill 831, passed by Montana's 60th Legislature, and effective on May 3, 2007, revised water laws in basin closure areas. These rules clarify the sections of HB 831 pertaining to net depletion and remove current sections made obsolete by the new statute. The rules are needed to ensure that both the department and water right applicants understand the definitions of and the requirements for applications affected by the new statute.

4. Concerned persons may submit their data, views, or arguments, either orally or in writing, at the hearing. Written data, views, or arguments may also be submitted in writing to Kim Overcast, Department of Natural Resources and Conservation, 1424 9th Avenue, Helena, MT 59620; fax (406) 444-5918; or e-mail kovercast@mt.gov, and must be postmarked no later than September 26, 2007.

5. Kim Overcast, Department of Natural Resources and Conservation, has been designated to preside over and conduct the hearing.

6. An electronic copy of this Notice of Public Hearing on Proposed Amendment is available through the department's site on the World Wide Web at http://www.dnrc.mt.gov. The department strives to make the electronic copy of this Notice of Public Hearing on Proposed Amendment conform to the official version of the Notice, as printed in the Montana Administrative Register, but advises all concerned persons that in the event of a discrepancy between the official printed text of the Notice and the electronic version of the Notice, only the official printed text will be considered.

7. The agency maintains a list of interested persons who wish to receive notices of rulemaking actions proposed by this agency. Persons who wish to have their name added to the list shall make a written request which includes the name

and mailing address of the person to receive notices and specifies that the person wishes to receive notices regarding conservation districts and resource development, forestry, oil and gas conservation, trust land management, water resources, or combination thereof. Such written request may be mailed or delivered to Legal Unit, Department of Natural Resources and Conservation, 1625 11th Avenue, Helena, MT 59620, faxed to the office at (406) 444-2684, or may be made by completing a request form at any rules hearing held by the agency.

8. The bill sponsor notice requirements of 2-4-302, MCA, apply and have been fulfilled. The bill sponsor was notified by regular mail on July 20, 2007.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

/s/ Mary Sexton
MARY SEXTON
Director
Natural Resources and Conservation

/s/ Anne Yates
ANNE YATES
Rule Reviewer

Certified to the Secretary of State on August 13, 2007.